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EXAMINER				
AFZALI, SARANG				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,629

Applicant(s)

FRITZ ET AL.

Examiner

SARANG AFZALI

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date 20060405
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it repeats the independent claim 1 without adhering to the proper content and format as set forth above.

Correction is required. See MPEP § 608.01(b).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject

matter of the claimed invention. This item may also be titled "Technical Field."

- (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The disclosure is objected to because of the following informalities: The specification does not include the headings/sub-headings as outlined above.

Specification, line 25, the phrase "outside shaft 2" should read - - outside shaft 12

- -.

Appropriate correction is required.

Claim Objections

2. Claims 2, 3, 6 and 10 are objected to because of the following informalities:

Claim 2, recites the limitation "cams (1, 2, 4) to be mounted are spaced an axial distance apart" in lines 2 and 3 which seems to be incorrect and should be changed to read that the cams are equal distance apart in an axial direction.

Claim 3, line 5, the limitation "inside shaft (12)" should read - - inside shaft (11) - -.

Claim 6, line 5, the limitation "wherein least two screws (5)" should read - - wherein at least two screws (5) - -.

Claim 10, line 8, the limitation "second cams (4)" should read - - second cam (4) - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

There are numerous phrases and clauses in the claims that are vague, indefinite, and/or awkwardly and confusingly worded, and therefore, are not fully understood. The following are examples:

5. Claims 1-10 lack positive manipulative steps that conform to the standard U.S. method format.

The reference numbers used to depict elements such as shafts and cams are confusing as for example the reference numbers (11) and (12) are used to depict inside and outside shafts respectively, while the reference (11, 12) is used to depict a shaft. In addition, it seems that "first cam" comprises of cams (1, 2) and "second cam" comprises of cam (4). As such, the limitation of "the at least two cams (1, 2, 4) to be detachably mounted on the shaft (11, 12)" in lines 9-10 of claim 1, is not clear as if cam (2) and cam (4), or cam (1) and cam (4) or cam (1) and (2) can be considered as the "at least two cams" that are detachably mounted on the shaft?

The limitation "completely machined" in lines 17 and 19 in claim 1 is vague and not clear as to what degree and specification the machined surfaces are considered complete or incomplete?

Applicant is urged to either delete all the reference numerals in the claims or clearly differentiate between each cam and pair of cams and each shaft and pair of shafts.

Claim 1, recites the limitation "the former" in line 6 and the limitation "the detachable joining" in line 26. There is insufficient antecedent basis for each of these limitations in the claim.

Claim 2, recites the limitation "such axial spacings" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 2, recites the limitation "the spacers (3)" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 3, line 5, the limitation of "with an opening larger than" may need to be changed to - - with an opening with a diameter larger than - - and the limitation "whereby this is true" in line 7 is indefinite.

Claim 3, recites the limitation "the spacers (3)" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 4, lines 7-8, the limitation of "the fitting borehole (7) is created while the respective second cam (4) is within the machining module" is unclear as to whether the machining of the borehole is created while the machining module is mounted on the shaft or not and if so, is it prior to the detachable joining of the first and second cams being separated or after the separation?

Claim 5, recites the limitation "the detachable joining" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 9, recites the limitation "the screws (5)" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims are ambiguous and competitors would be unable to discern the bounds of the inventions.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 8, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Methley (US 2002/0170514 A1).

As applied to claim 1, Methley teaches a method for manufacturing a camshaft in which at least, two completely machined individual cams (16a, 16b, 18a, 18b, Figs. 1 & 2) are fixedly mounted on a shaft in predetermined angular positions, whereby the shaft may consist in particular of an outside shaft (14) and an inside shaft (12) arranged concentrically inside the former, characterized by wherein the following manufacturing steps, to be performed in chronological order:

the at least two cams (16a, 16b, 18a, 18b) to be detachably mounted (can be detached from the shaft if needed) are combined (put together) to form a machining module before being mounted on the shaft (before element 20 and 22 are applied, the cams are mounted (placed) on the outside shaft (14), whereby the first cams (16a, 16b) which are immovable with respect to one another on the finished camshaft are aligned in an arrangement corresponding to the final arrangement on the shaft;

at least the cam contours of the at least two cams (16a, 16b, 18a, 18b) are completely machined within the machining module from the radial peripheral surfaces of the cams (Fig. 4 depict the radial peripheral surfaces of the cams are machined and formed into some finished shapes);

the completely machined cams (16a, 16b, 18a, 18b) are mounted on the shaft within the machining module;

the first cams (16a, 16b) which are immovable with respect to one another on the finished camshaft are fixedly connected to the shaft (12) in their arrangement within the machining module that is fixedly defined at least with regard to their angular position; and

the detachable joining of the cams (16a, 16b, 18a, 18b) within the machining module is separated.

Note that Methley teaches that the cams (16a, 16b, 18a, 18b) are detachably joined when mounted and arranged on a shaft (14) in order to form a machining module wherein the cams (18a, 18b) and (16a, 16b) are in predetermined axial and angular positions (Figs. 1 & 2). In addition, there is a clearance between the outside of the inside shaft (12) with the inside of the outside shaft (14) when concentrically arranged one inside the other. As such, once the hollow pin (20) is inserted into the clearance hole (24) and element (22) is inserted and expanded into hollow pin (20), this would result in cams (16a, 16b) to be rotatably retained by the inside shaft (12) while cams (18a, 18b) are rotatably retained by outside shaft (14) which would result in the cams (16a, 16b) to become separated from the cams (18a, 18b) within the machining module.

The limitation of "whereupon positioning means and/or auxiliary connecting means (3, 5) that may optionally be used within the machining module are removed" is not given any patentable weight since it is considered **an optional** step which is not required to be met by the applied art of Methley.

As applied to claim 8, Methley teaches the invention cited including the elements (20 and 22) which are considered s dowel pins and are positioned axially through the machined module (Fig. 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Methley.

Methley teaches the invention cited including a borehole through the second cams (16a, 16b) but does not explicitly teach that the borehole is created while the second cams (16a, 16b) are within the machining element (either before or after the separation).

However, it would have been obvious matter of design choice to a person of ordinary skill in the art, at the time of invention, to have created the borehole into the second cams while within the machining module allowing the second cams to be fixedly attached to the inside shaft because the Applicant has not disclosed that only the

creating of the borehole into the second cam while it is within the machining module provides any advantages, is used for a particular purpose, or solves a stated problem.

It seems that whether the fitting borehole in the second cam was created while the second cam was not within the machining module or while it was within the machining module either prior to or after being mounted on the shaft or either prior to or after the first and second cams were separated from each other, would have still worked equally well as they would all provide a hole that would be used to fixedly attach the second cam to the inside shaft.

10. Claims 2 and 3, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Methley in view of Arnold et al. (US 5,201,246).

As applied to claims 2 and 3, Methley teaches the invention cited including the axial spacings provided between the cams but does not explicitly teach the use of spacers (as in claim 2) and the opening at the circumference of the spacer larger than the outside diameter of the shaft (as in claim 3).

However, Arnold et al. teach that it is well-known in the art of camshaft manufacturing to use spacers (C-shaped spacers 58 with openings 59, Fig. 10) located between the elements (cams 41) for longitudinal positioning for ease of assembly (col. 4, lines 22-30, 48-50).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention to have provided Methley with spacers including slots/openings at their circumferences larger than the outside diameter of the shaft as taught by Arnold et al.,

as an effective means of providing suitable and desired axial spacings between the cams.

Allowable Subject Matter

Claims 5-7, 9 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and other claim objection(s), set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 5-7 and 9, the prior art fails to teach or fairly suggest the steps of providing screw(s) (5) passing axially through the cams and spacer to provide detachable joining of the cams with combination with the rest of the limitations.

Note that Claim 1 should positively recite that the positioning means are used within the machining module.

Regarding claim 10, the prior art fails to teach or fairly suggest the step of machining the radial inside surfaces for all cams to the same diameter and the step of providing a recess with a reduced diameter on the outside shaft allowing a play-free rotation of the second cam on the outside shaft in combination with the rest of the limitations..

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARANG AFZALI whose telephone number is (571) 272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SARANG AFZALI/
Examiner, Art Unit 3726
3/10/2010